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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,503	04/21/2004	Hirohisa Suzuki	AI 338	4304

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Washington, DC 20005

EXAMINER

MCCREARY, LEONARD

ART UNIT	PAPER NUMBER
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3616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/828,503

Applicant(s)

SUZUKI ET AL.

Examiner

Leonard J. McCreary, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 and 11 stand rejected under 35 U.S.C. 102(b) as being anticipated by US 5,492,338 to Grafenstein. Grafenstein discloses a hollow elastic seal comprising the following:

a. A column hole cover 4 interposed between a circumferential portion of an aperture of a column hole formed at an instrument panel 1 for insertion of a steering column 16 therethrough and a steering gear box 2 capable of being displaced in a predetermined direction, the column hole cover comprising: a cylindrical main body 5 extended in the predetermined direction, the main body including a first annular end portion 8 directly or indirectly fixed to the steering gear box, a second annular end portion (see Figure A of this Action), and an intermediate portion (see Figure A of this Action) between the first and second end portions, the second end portion including an annular seal, the intermediate portion including a expandable/contractible portion capable of being elastically expanded or contracted in the predetermined direction, wherein, irrespective of the displacement of the steering gear box, the annular seal is maintained in an

elastic pressure contact against the circumferential portion of the aperture of the instrument panel by a reaction force of the compressed expandable/contractible portion (col 1, lin 39-50) (claim 1.)

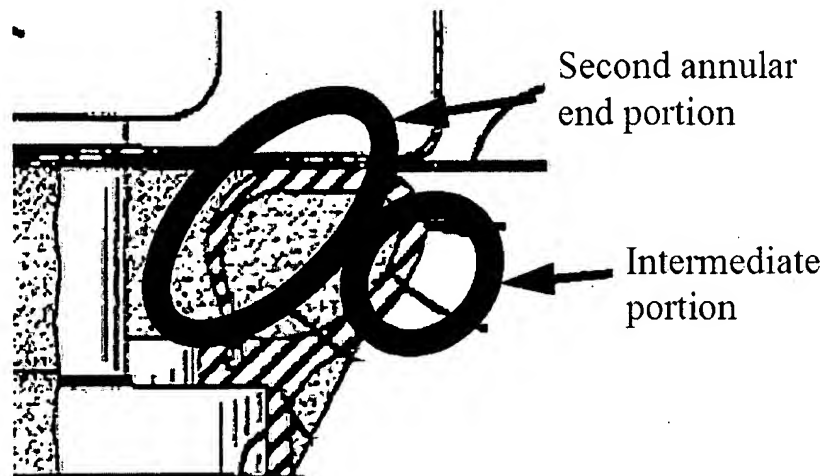


Figure A

- b. The annular seal is slidably movable along the circumferential portion of the aperture of the instrument panel in association with the displacement of the steering gear box (claim 2.)
- c. The maximum compressible amount of the expandable/contractible portion is designed to be greater than the maximum displacement of the steering gear box (col 1, lin 39-50) (claim 3.)
- d. The expandable/contractible portion has a predetermined amount of compression when the steering gear box is located farthest away from the circumferential portion of the aperture of the instrument panel (col 1, lin 39-50) (claim 4.)

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- e. The annular seal including an annular flange, the annular flange including a confronting face in face-to-face relation with the circumferential portion of the aperture 12 of the instrument panel, the confronting face of the annular flange including at least one annular seal lip (fig. 1) (claim 5.)
- f. The expandable/contractible portion includes a bellows (claim 11.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,492,338 to Grafenstein. The disclosure of Grafenstein is discussed above. Grafenstein does not teach specific materials beyond the example of an elastomer (col 1, lin 56-57.) Re claims 12-14, it would have been an obvious matter of design choice construct the elastic seal of Grafenstein using elastomers such as rubbers since applicant has not disclosed that the claimed materials solve any stated problem or is for any particular purpose and it appears that the apparatus would function equally as well with other elastomers. Further, as elastomers are naturally- or synthetically-occurring elastic substances, it would have been obvious to one of ordinary skill in the art at the time of invention to use any one of various types of rubbers to construct the elastic seal so as to impart a resilient force at the sealing surface. Re claim 15, it would have been

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obvious to one of ordinary skill in the art at the time of invention to modify the elastic seal of Gradenstein to include a spacer between the steering gear box and the first end portion of the main body so as to accommodate installation of the apparatus on various model vehicles having different geometries.

5. Claims 6 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,492,338 to Grafenstein in view of US 6,056,297 to Harkrader et al. The disclosure of Grafenstein is discussed above. Grafenstein teaches neither a circumferential portion reduced in thickness having a plurality of annular seal lips, nor an inclined portion. Harkrader discloses an intermediate shaft dash panel seal and teaches the following:

- g. The annular flange including an outside circumference portion 39 relatively reduced in thickness (claim 6.)
- h. The annular seal includes a skirt portion 30, an outside circumference of which is inclined relative to a plane orthogonal to an axis along the predetermined direction (fig. 2) (claim 10.)

Re claim 6, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the elastic seal of Gradenstein to include the outside circumference portion relatively reduced thickness as taught by Harkrader so as to provide a seal against water, fumes, and dirt (col 1, lin 58-65.) Re claim 10, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the elastic seal of Gradenstein to include a relatively angular portion as taught by Harkrader so as

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to accommodate universal installation in various vehicle models having different geometries (col 2, lin 4-5.)

6. Claims 8-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,492,338 to Grafenstein in view of US 2,906,552 to White. The disclosure of Grafenstein is discussed above. Grafenstein does not teach a low-friction sealing surface. White discloses a sealing device having low-friction sealing faces. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the elastic seal of Grafenstein to include the low-friction sealing faces as taught by White so as to prevent friction-induced deterioration of the elastomeric seal body (col 1, lin 15-26.) Re claim 9, it would have been an obvious matter of design choice construct the elastic seal of Grafenstein using a low-friction material such as a silicone resin, PTFE, or any other material that is similarly old and well-known in the sealing art so as to facilitate assembly and to further protect against friction-induced deterioration of the sealing faces.

7. Claim 17 stands rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,966,559 to Fischer et al. in view of US 5,492,338 to Grafenstein. Fischer discloses a sealing bellows comprising:

- i. A column hole cover 10 interposed between a circumferential portion of an aperture of a column hole formed at a structure for insertion of a column 38 therethrough and a component 44 capable of being displaced in a predetermined

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direction, the column hole cover comprising: a cylindrical main body 10 extended in the predetermined direction, and including: a first annular end portion 15 directly or indirectly fixed to the component, a second annular end portion 16 having an annular seal, and a single intermediate portion disposed between the first and second end portions, and including an expandable/contractible portion that is elastically expandable or contractible in the predetermined direction; wherein, irrespective of the displacement of the component, the annular seal is maintained in an elastic pressure contact against the circumferential portion of the aperture of the structure by a reaction force of the compressed expandable/contractible portion; wherein the second annular portion and annular seal are disposed closer to the aperture of the structure than are the first annular end portion and the intermediate portion; wherein the intermediate portion is disposed closer to the aperture of the structure than is the first annular end portion; and wherein the expandable/contractible portion is located only in the single intermediate portion (figs 4, 6) (claim 17).

Fischer does not teach the seal used with a steering column and steering gearbox.

Grafenstein discloses an elastic seal disposed between a instrument panel 1 and a steering box. It would have been obvious to one of ordinary skill in the art at the time the apparatus was made to modify the sealing bellows of Fischer to use with a steering column, instrument panel, and steering gear box as taught by Grafenstein so as to seal the interior of the vehicle cabin against air drafts, noise, and water (col 1, lin 9-10).

Allowable Subject Matter

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 16 is allowed.

Response to Arguments

8. Applicant's arguments filed 7 December 2006 have been fully considered but they are not persuasive. Applicant argues that the second annular seal is on the second end portion, which is not shown by the reference numeral cited by the Examiner. In the previous Action, the Examiner referred to the nearest numerals, which made the record unclear. The present Action has clarified the rejection (see Figure A above), which the Examiner maintains as proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. McCreary, Jr. whose telephone number is 571-272-8766. The examiner can normally be reached on 0700-1700 M-F.

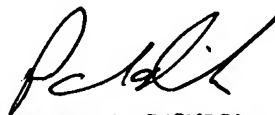
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Leonard J. McCreary, Jr.
Examiner
Art Unit 3616



PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
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3/5/07